Complete Summary

GUIDELINE TITLE

Screening for iron deficiency anemia - including iron supplementation for children and pregnant women.

BIBLIOGRAPHIC SOURCE(S)

U.S. Preventive Services Task Force (USPSTF). Screening for iron deficiency anemia - including iron supplementation for children and pregnant women. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006. 12 p. [12 references]

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previously published guideline summary: U.S. Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. Chapter 22, Screening for iron deficiency anemia--including iron prophylaxis. p. 231-46.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Iron deficiency anemia

GUIDELINE CATEGORY

Prevention
Screening
Treatment

CLINICAL SPECIALTY

Family Practice
Pediatrics
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To summarize the U.S. Preventive Services Task Force recommendations on screening for iron deficiency anemia and iron supplementation, and the supporting evidence
- To update the 1996 recommendations contained in the Guide to Clinical Preventive Services, Second Edition

TARGET POPULATION

- Children aged 6 to 12 months who are at increased risk and average risk for iron deficiency anemia
- Asymptomatic pregnant women and non-anemic pregnant women

Note: Infants younger than 6 months of age, older children, non-pregnant women, and men are not addressed in this guideline.

INTERVENTIONS AND PRACTICES CONSIDERED

1. Routine screening for iron deficiency anemia
2. Iron supplementation

MAJOR OUTCOMES CONSIDERED

- Key Question 1: Is there direct evidence that screening for iron deficiency in asymptomatic children results in improved behavioral, motor, or cognitive development, and/or growth?
- Key Question 2: Does early iron supplementation in infants, children, adolescent girls, or pregnant women with iron deficiency anemia improve these outcomes?
- Key Question 3: What are the adverse effects of screening for iron deficiency anemia?
- Key Question 4: What are the adverse effects of iron supplementation?

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Note from the National Guideline Clearinghouse (NGC): A systematic review of the literature was prepared by the Oregon Evidence-based Practice Center (EPC) and Oregon Health & Science University for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Companion Documents" field).

Literature Search Strategy

EPC personnel searched the Cochrane Database of Systematic Reviews (2005, v.2), Cochrane CENTRAL (2005, v.2), reference lists of review articles, and tables of contents of leading pediatric journals for studies published 1995 or later that contained new information about the prevalence, diagnosis, natural course, or treatment of iron deficiency anemia in asymptomatic persons. They also searched the web site of the Iron Deficiency Project Advisory Service Working Group on Iron Deficiency Anemia in Children <2 (http://www.micronutrient.org/idpas/WorkingGroup.html), which maintains bibliographies and reprints of articles about the prevalence and cognitive consequences of iron deficiency in developing countries.

Inclusion/Exclusion Criteria

Articles that met the following criteria were included in this update:

1. The study was a systematic review, prospective cohort study, controlled trial, quasi-experimental study with concurrent controls, or case-control study; not a case series, case report, or comparison with historical controls.
2. The study was not included in the 1996 review.
3. The study was rated at least "fair-quality" using the USPSTF criteria for internal validity.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The U.S. Preventive Services Task Force grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

Good

Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair

Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor

Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Note from the National Guideline Clearinghouse (NGC): A systematic review of the literature was prepared by the Oregon Evidence-based Practice Center (EPC) and Oregon Health & Science University for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Companion Documents" field).

Synthesis

Eligible studies were rated and abstracted by one investigator. Because several recent meta-analyses were available, the investigator did not conduct a new quantitative synthesis; instead the focus was on reporting the results of a critical appraisal of trials published since the USPSTF's 1996 guideline. USPSTF members also reviewed key studies identified in the review.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Balance Sheets
Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

When the overall quality of the evidence is judged to be good or fair, the U.S. Preventive Services Task Force (USPSTF) proceeds to consider the magnitude of net benefit to be expected from implementation of the preventive service. Determining net benefit requires assessing both the magnitude of benefits and the magnitude of harms and weighing the two.

The USPSTF classifies benefits, harms, and net benefits on a 4-point scale: "substantial," "moderate," "small," and "zero/negative."

"Outcomes tables" (similar to "balance sheets") are the USPSTF's standard resource for estimating the magnitude of benefit. These tables, prepared by the topic teams for use at USPSTF meetings, compare the condition specific outcomes expected for a hypothetical primary care population with and without use of the preventive service. These comparisons may be extended to consider only people of specified age or risk groups or other aspects of implementation. Thus, outcomes tables allow the USPSTF to examine directly how the preventive service affects benefits for various groups.

When evidence on harms is available, the topic teams assess its quality in a manner like that for benefits and include adverse events in the outcomes tables. When few harms data are available, the USPSTF does not assume that harms are small or nonexistent. It recognizes a responsibility to consider which harms are likely and judge their potential frequency and the severity that might ensue from implementing the service. It uses whatever evidence exists to construct a general confidence interval on the 4-point scale (e.g., substantial, moderate, small, and zero/negative).

Value judgments are involved in using the information in an outcomes table to rate either benefits or harms on the USPSTF's 4-point scale. Value judgments are also needed to weigh benefits against harms to arrive at a rating of net benefit.

In making its determinations of net benefit, the USPSTF strives to consider what it believes are the general values of most people. It does this with greater confidence for certain outcomes (e.g., death) about which there is little disagreement about undesirability, but it recognizes that the degree of risk people are willing to accept to avert other outcomes (e.g., cataracts) can vary considerably. When the USPSTF perceives that preferences among individuals vary greatly, and that these variations are sufficient to make the trade-off of benefits and harms a "close-call," then it will often assign a C recommendation (see the "Recommendation Rating Scheme" field). This recommendation indicates the decision is likely to be sensitive to individual patient preferences.

The USPSTF uses its assessment of the evidence and magnitude of net benefit to make recommendations. The general principles the USPSTF follows in making recommendations are outlined in Table 5 of the companion document cited below. The USPSTF liaisons on the topic team compose the first drafts of the recommendations and rationale statements, which the full panel then reviews and edits. Recommendations are based on formal voting procedures that include explicit rules for determining the views of the majority.

From: Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the

process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations according to one of five classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

A

The USPSTF strongly recommends that clinicians provide [the service] to eligible patients. The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.

B

The USPSTF recommends that clinicians provide [this service] to eligible patients. The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

C

The USPSTF makes no recommendation for or against routine provision of [the service]. The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.

D

The USPSTF recommends against routinely providing [the service] to asymptomatic patients. The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.

I

The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. Evidence that the [service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Peer Review. Before the U.S. Preventive Services Task Force makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft systematic evidence review to 4 to 6 external experts and to federal agencies and professional and disease-based health organizations with interests in the topic. They ask the experts to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the Task Force in memo form. In this way, the Task Force can consider these external comments and a final version of the systematic review before it votes on its recommendations about the service. Draft recommendations are then circulated for comment from reviewers representing professional societies, voluntary organizations, and Federal agencies. These comments are discussed before the whole U.S. Preventive Services Task Force before final recommendations are confirmed.

Recommendations of Others. Recommendations regarding screening for iron deficiency anemia from the following groups were discussed: The Centers for Disease Control and Prevention (CDC); The American Academy of Pediatrics (AAP); The American Academy of Family Physicians (AAFP) and The American College of Obstetricians and Gynecologists (ACOG).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the U.S. Preventive Services Task Force (USPSTF): The USPSTF is redesigning its recommendation statement in response to feedback from primary care clinicians. The USPSTF plans to release, later in 2006, a new, updated recommendation statement that is easier to read and incorporates advances in USPSTF methodology. The recommendation statement below is an interim version that combines existing language and elements with a new format. Although the definitions of grades remain the same, other elements have been revised.

The USPSTF grades its recommendations (A, B, C, D, or I) and the quality of the overall evidence for a service (good, fair, poor). The definitions of these grades can be found at the end of the "Major Recommendations" field.

Summary of Screening Recommendations

Screening Children and Pregnant Women for Iron Deficiency Anemia

1. The USPSTF concludes that evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months. I recommendation
2. The USPSTF recommends routine screening for iron deficiency anemia in asymptomatic pregnant women. B recommendation

The USPSTF was unable to determine the balance between the benefits and harms of routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months. The USPSTF concludes that the benefits of routine screening for iron deficiency anemia in asymptomatic pregnant women outweigh the potential harms.

Summary of Supplementation Recommendations

Iron Supplementation for Children and Pregnant Women

1. The USPSTF recommends routine iron supplementation for asymptomatic children aged 6 to 12 months who are at increased risk for iron deficiency anemia (see Clinical Considerations below for a discussion of increased risk). B recommendation
2. The USPSTF concludes that evidence is insufficient to recommend for or against routine iron supplementation for asymptomatic children aged 6 to 12 months who are at average risk for iron deficiency anemia. I recommendation
3. The USPSTF concludes that evidence is insufficient to recommend for or against routine iron supplementation for non-anemic pregnant women. I recommendation

The USPSTF concludes that the moderate benefits of iron supplementation in asymptomatic children aged 6 to 12 months who are at increased risk for iron deficiency anemia outweigh the potential harms. The USPSTF was unable to determine the balance between the benefits and harms of iron supplementation in children aged 6 to 12 months who are at average risk for iron deficiency anemia, and of iron supplementation in non-anemic pregnant women.

Clinical Considerations

- These USPSTF recommendations address screening for iron deficiency anemia and iron supplementation in children aged 6 to 12 months who are at increased risk and average risk, in asymptomatic pregnant women, and in non-anemic pregnant women. Infants younger than 6 months of age, older children, non-pregnant women, and men are not addressed.
- Iron deficiency anemia can be defined as iron deficiency (abnormal values for serum ferritin, transferrin saturation, and free erythrocyte protoporphyrin) with a low hemoglobin or hematocrit value. Iron deficiency is much more common than iron deficiency anemia and is part of a continuum that ranges from iron depletion to iron deficiency anemia. Many of the negative health outcomes of iron deficiency are associated with its extreme manifestation, iron deficiency anemia. Iron deficiency has also been associated with negative neurodevelopmental outcomes in children.

- Other causes of anemia vary by population and include other nutritional deficiencies, abnormal hemoglobin (e.g., thalassemia), enzyme defects, and anemia associated with acute and chronic infections.
- In the U.S., race, income, education, and other socioeconomic factors are associated with iron deficiency and iron deficiency anemia. Individuals considered to be at high risk for iron deficiency include adult females, recent immigrants and, among adolescent females, fad dieters, and those who are obese. Premature and low birth weight infants are also at increased risk for iron deficiency.
- Venous hemoglobin is more accurate than capillary hemoglobin for identifying anemia. Ferritin has the highest sensitivity and specificity for diagnosing iron deficiency in anemic patients.
- Iron deficiency anemia is usually treated with oral iron preparations. The likelihood that iron deficiency anemia identified by screening will respond to treatment is unclear because many families do not adhere to treatment and because the rate of spontaneous resolution is high. Ninety-seven percent (97%) of the infant formula sold in the U.S. is iron-fortified. Substantial reductions in the incidence of iron deficiency and iron deficiency anemia have been demonstrated in healthy infants fed iron-fortified formula or iron-fortified cereal, compared with infants fed cow's milk or unfortified formula.
- Iron supplements accounted for 30% of fatal pediatric pharmaceutical overdoses occurring between 1983 and 1990, and iron poisoning has been observed even in the context of controlled trials in which parents were instructed in the safe storage and use of iron products. A reduction in deaths of children due to iron overdose was observed when unit-dose packaging was required between 1998 and 2002; this requirement was overturned by the courts in 2003.

Definitions:

Strength of Recommendations

The USPSTF grades its recommendations according to one of five classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

A

The USPSTF strongly recommends that clinicians provide [the service] to eligible patients. The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.

B

The USPSTF recommends that clinicians provide [this service] to eligible patients. The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

C

The USPSTF makes no recommendation for or against routine provision of [the service]. The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.

D

The USPSTF recommends against routinely providing [the service] to asymptomatic patients. The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.

I

The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. Evidence that the [service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.

Strength of Evidence

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

Good

Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair

Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor

Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is identified in the "Major Recommendations" field.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Benefits of Detection and Early Intervention

The U.S. Preventive Services Task Force (USPSTF) found no evidence that universal or selective screening for iron deficiency anemia in asymptomatic children results in improved health outcomes. The USPSTF found poor evidence (conflicting studies) of the effectiveness of interventions that demonstrate improved health outcomes, such as developmental status, in asymptomatic children. The USPSTF found fair evidence that treating asymptomatic pregnant women who have iron deficiency anemia results in moderate benefits in health outcomes.

Benefits of Risk Assessment and Preventive Medication

The USPSTF found fair evidence that iron supplementation (e.g., iron-fortified formula or iron supplements) may improve neurodevelopmental outcomes in children at increased risk for iron deficiency anemia. The USPSTF found poor evidence (poor quality and conflicting studies) that iron-fortified formula or supplementation improves neurodevelopmental outcomes in children aged 6 to 12 months if they are not at increased risk for iron deficiency anemia. The USPSTF found poor evidence (poor quality studies) that iron supplementation may improve health outcomes in non-anemic pregnant women.

POTENTIAL HARMS

Harms of Screening and Treatment for Children

The U.S. Preventive Services Task Force found no new evidence regarding the potential harms of screening for iron deficiency anemia in infants and children. Potential harms of screening include false-positive results, anxiety, and cost. Unintentional overdose is a known potential harm of treatment with oral iron, as are gastrointestinal symptoms. Given appropriate protection against overdose, these harms are small. Cohort studies have reported no important adverse effects with iron-fortified formula, nor were serious side effects reported in the clinical trials of iron fortified food or formula.

Harms of Screening and Treatment for Pregnant Women

The U.S. Preventive Services Task Force found no evidence on the harms of screening for iron deficiency anemia in asymptomatic pregnant women. Potential harms are the same as those found in children. There is poor evidence (poor quality studies) on the potential harms of iron supplementation in non-anemic pregnant women. Unintentional overdose of young children in the home is a known potential harm of supplementation with oral iron. Another potential harm of iron supplementation is higher Caesarean section rates. In one Finnish trial of

pregnant women, routine iron supplementation led to higher rates of Caesarean sections and post partum blood transfusions. Study investigators attributed the increased caesarean sections and blood transfusion rates to possible anxiety by midwives and obstetricians about low hematocrit values in the selectively supplemented group.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Recommendations made by the U.S. Preventive Services Task Force (USPSTF) are independent of the U.S. Government. They should not be construed as an official position of the Agency for Healthcare Research and Quality (AHRQ) or the U.S. Department of Health and Human Services.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of organized systems in most practices to ensure the delivery of recommended preventive care.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the Agency for Healthcare Research and Quality will make all U.S. Preventive Services Task Force (USPSTF) products available through its Web site. The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access U.S. Preventive Services Task Force materials and adapt them for their local needs. Online access to U.S. Preventive Services Task Force products also opens up new possibilities for the appearance of the annual, pocket-size Guide to Clinical Preventive Services.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals, and test results are not always centralized.

IMPLEMENTATION TOOLS

Foreign Language Translations
Patient Resources
Personal Digital Assistant (PDA) Downloads
Pocket Guide/Reference Cards
Tool Kits

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

U.S. Preventive Services Task Force (USPSTF). Screening for iron deficiency anemia - including iron supplementation for children and pregnant women. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006. 12 p. [12 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 (revised 2006)

GUIDELINE DEVELOPER(S)

United States Preventive Services Task Force - Independent Expert Panel

GUIDELINE DEVELOPER COMMENT

The U.S. Preventive Services Task Force (USPSTF) is a federally-appointed panel of independent experts. Conclusions of the U.S. Preventive Services Task Force do not necessarily reflect policy of the U.S. Department of Health and Human Services (DHHS) or its agencies.

SOURCE(S) OF FUNDING

United States Government

GUIDELINE COMMITTEE

U.S. Preventive Services Task Force (USPSTF)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members of the U.S. Preventive Services Task Force*: Ned Calonge, MD, MPH, Chair, USPSTF (Chief Medical Officer and State Epidemiologist, Colorado Department of Public Health and Environment, Denver, CO); Diana B. Petitti, MD, MPH , Vice-chair, USPSTF (Senior Scientific Advisor for Health Policy and Medicine, Regional Administration, Kaiser Permanente Southern California, Pasadena, CA); Thomas G. DeWitt, MD (Carl Weihl Professor of Pediatrics and Director of the Division of General and Community Pediatrics, Department of Pediatrics, Children's Hospital Medical Center, Cincinnati, OH); Leon Gordis, MD, MPH, DrPH (Professor, Epidemiology Department, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD); Kimberly D. Gregory, MD, MPH (Director, Women's Health Services Research and Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA); Russell Harris, MD, MPH (Professor of Medicine, Sheps Center for Health Services Research, University of North Carolina School of Medicine, Chapel Hill, NC); Kenneth W. Kizer, MD, MPH (President and CEO, National Quality Forum, Washington, DC); Michael L. LeFevre, MD, MSPH (Professor, Department of Family and Community Medicine, University of Missouri School of Medicine, Columbia, MO); Carol Loveland-Cherry, PhD, RN (Executive Associate Dean, Office of Academic Affairs, University of Michigan School of Nursing, Ann Arbor, MI); Lucy N. Marion, PhD, RN (Dean and Professor, School of Nursing, Medical College of Georgia, Augusta, GA); Virginia A. Moyer, MD, MPH (Professor, Department of Pediatrics, University of Texas Health Science Center, Houston, TX); Judith K. Ockene, PhD (Professor of Medicine and Chief of Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, MA); George F. Sawaya, MD (Associate Professor, Department of Obstetrics, Gynecology, and Reproductive Sciences and Department of Epidemiology and Biostatistics, University of California, San

Francisco, CA); Albert L. Siu, MD, MSPH (Professor and Chairman, Brookdale Department of Geriatrics and Adult Development, Mount Sinai Medical Center, New York, NY); Steven M. Teutsch, MD, MPH (Executive Director, Outcomes Research and Management, Merck & Company, Inc., West Point, PA); and Barbara P. Yawn, MD, MSc (Director of Research, Olmstead Research Center, Rochester, MN).

*Members of the USPSTF at the time this recommendation was finalized. For a list of current Task Force members, go to www.ahrq.gov/clinic/uspstfab.htm.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The U.S. Preventive Services Task Force has an explicit policy concerning conflict of interest. All members and evidence-based practice center (EPC) staff disclose at each meeting if they have an important financial conflict for each topic being discussed. Task Force members and EPC staff with conflicts can participate in discussions about evidence, but members abstain from voting on recommendations about the topic in question.

From: Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previously published guideline summary: U.S. Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. Chapter 22, Screening for iron deficiency anemia--including iron prophylaxis. p. 231-46.

GUIDELINE AVAILABILITY

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

Print copies: Available from the Agency for Healthcare Research and Quality (AHRQ) Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Screening for iron deficiency anemia in childhood and pregnancy. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2006 Apr 21. 50 p. Electronic copies: Available in Portable Document Format (PDF) from the U.S. Preventive Services Task Force (USPSTF) Web site.

Background Articles:

- Woolf SH, Atkins D. The evolving role of prevention in health care: contributions of the U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):13-20.
- Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.
- Saha S, Hoerger TJ, Pignone MP, Teutsch SM, Helfand M, Mandelblatt JS. The art and science of incorporating cost effectiveness into evidence-based recommendations for clinical preventive services. Cost Work Group of the Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):36-43.

Electronic copies: Available from U.S. Preventive Services Task Force (USPSTF) Web site.

The following are also available:

- The guide to clinical preventive services, 2005. Recommendations of the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2005. 192 p. Electronic copies available from the AHRQ Web site.

Print copies: Available from the Agency for Healthcare Research and Quality Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

The Interactive Preventive Services Selector tool, which enables users to search USPSTF recommendations by patient age, sex, and pregnancy status, is available as a web-based version or PDA application. It is available from the AHRQ Web site.

PATIENT RESOURCES

The following is available:

- The Pocket Guide to Good Health for Adults. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2003.

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site. Copies also available in Spanish from the USPSTF Web site.

Print copies: Available from the Agency for Healthcare Research and Quality (AHRQ) Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on June 30, 1998. The information was verified by the guideline developer on December 1, 1998. This summary was updated by ECRI on May 8, 2006. The updated information was verified by the guideline developer on May 17, 2006.

COPYRIGHT STATEMENT

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx.

NGC, AHRQ, and its contractor ECRI make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

Date Modified: 9/25/2006